

L Number	Hits	Search Text	DB	Time stamp
6	11	("5763028" "5364665" "5695836" "4001870" "5229172").pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 15:31
7	13	("5763028" "5364665" "5695836" "4001870" "5229172" "6376559").pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 17:54
8	3	ogawa.in. and plasma near9 argon and polypropylene	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:13
12	149	(kazufumi near3 ogawa).in. and plasma	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:15
11	1	(kazufumi near3 ogawa).in. and plasma near9 argon	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:15
13	12	(kazufumi near3 ogawa).in. and plasma and (ar (inert near2 gas) argon)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:22
14	3714	plasma near9 (ar (inert near2 gas) argon) same oxygen	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:23
15	244	( plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma near9 treat\$9 same (plastic polypropylene polymeric)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:24
16	63	( plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma near9 treat\$9 same polypropylene same (surface substrate)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:25
17	83	( plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma near9 treat\$9 same (polypropylene polyolefin polyethylene) near9 (surface substrate)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:25
18	52	oxygen same (inert helium ar argon) same plasma near9 treat\$9 same (polypropylene polyolefin polyethylene) near9 (surface substrate)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:26
19	42	oxygen same (ar argon) same plasma near9 treat\$9 same (polypropylene polyolefin polyethylene) near9 (surface substrate)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:29

20	2	(oxygen same (ar argon) same plasma near9 treat\$9 same (polypropylene polyolefin polyethylene) near9 (surface substrate)) same ((reactive near3 functional\$4) hydroxy\$2)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:28
21	2	oxygen same (ar argon) same plasma same (polypropylene polyolefin polyethylene) near9 (surface substrate film) same ((reactive near3 functional\$4) hydroxy\$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:42
22	2	"20020098296"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 16:43
23	60	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide) SiO\$2)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 17:56
24	38	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide) SiO\$2) near9 (layer film coat\$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 17:58
25	19	(orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide) SiO\$2) near9 (layer film coat\$3)) same thick\$8	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 18:14
26	27	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide) SiOx) near9 (layer film coat\$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 18:07
27	15	(orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide) SiOx) near9 (layer film coat\$3)) same thick\$8	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 17:58
28	117	(orient\$6 stretch\$9 shrink\$9) same (polypropylene polyolefin) same ((silicon near3 oxide) SiO\$1x\$1)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 18:14
29	47	((orient\$6 stretch\$9 shrink\$9) same (polypropylene polyolefin) same ((silicon near3 oxide) SiO\$1x\$1) ) same thick\$8	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/09 18:15

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ACC-NO:

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WEEK:

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**TITLE:** Thermo-formable composite laminate with gas barrier properties - used for food container prodn., has inner sealable plastic layer, outer plastic layer and intermediate layer of (semi)metal oxide

**INVENTOR:** NAEGELI, H; PIETZSCH, J ; RUEEGG, K

**PATENT-ASSIGNEE:** ALUSUISSE LONZA SERVICES AG[SWAL]

**PRIORITY-DATA:** 1990CH-0001882 (June 6, 1990)

**PATENT-FAMILY:**

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CH 681530 A5	April 15, 1993	N/A	005	B65D 065/40

**APPLICATION-DATA:**

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
CH 681530A5	N/A	1990CH-0001882	June 6, 1990

**INT-CL (IPC):** B32B027/06, B65D065/40

**ABSTRACTED-PUB-NO:** CH 681530A

**BASIC-ABSTRACT:**

Container with barrier properties w.r.t gases and vapours made from a thermoformable or stretch formable composite laminate comprising a sealable plastics inner layer, a plastics outer layer and an intermediate layer between these comprising a layer of an oxide of a metal or semimetal or a mixt. of oxides of metals and/or semimetals applied to at least one plastic layer.

The inner and outer plastics layers are e.g films, composite films or laminates made up of polyolefins such as polyethylene or polypropylene; polyesters such as polyethylene terephthalate; PVC; polystyrene; polyamides such as PA6, PA66, PA12, etc., copolymers of known materials, etc. The thickness of the individual plastics layers is e.g, 8-2000 (pref. 10-600) microns. The film is esp. mono- or biaxially oriented. The oxide layer is pref. of an oxide of Si, Al, Cr, Ta, Ni, Mo or Pb and is esp. of SiO<sub>x</sub> where x = 1-2 or AlO<sub>y</sub> with y = 0.2-1.5. The oxide layer(s) are pref. 5-500nm, esp. 10-200nm and partic. 20-1560nm thick. The oxide layers are applied by vacuum thin layer techniques based e.g, on electron beam vapourisation or inductive heating of crucibles.

**USE/ADVANTAGE** - Conventional laminates contg. a thin Al foil layer as barrier material can only be stretched with very narrow limits, whereas the present laminates can be thermoformed or stretch formed

into packaging containers with good rigidity and good barrier properties w.r.t. gases and vapours, and which are transparent to light and to microwaves. The containers are esp. useful for food and perishable items and offer good protection against shock, oxidn. and other external mechanical, chemical and microbial influences to allow long term storage.

**CHOSEN-DRAWING:** Dwg.0/0

**DERWENT-CLASS:** A35 A92 P73 Q34

**CPI-** A05-F01E1; A05-F05; A09-A; A09-A01; A09-A06; A11-B08B; A12-C02; A12-P01A;  
**CODES:** A12-S05A; A12-S06C;